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ABSTRACT

This teaching manual is the fifth in a series designed for use in bilingual/bicultural programs. The purpose of the manual is to acquaint teachers with both field sensitive and field independent teaching strategies, and to help them adjust their teaching styles to the learning styles of their students. This objective is considered vitally important in creating culturally democratic educational environments. The manual begins with a number of exercises which indicate how easily the two teaching strategies can be mastered. Instructions for using field sensitive and field independent teaching strategies are explained, and a rating form to use in determining success in using either of the two strategies is included. Finally a discussion of curriculum indicates how the "style" of instructional materials can be identified and, when necessary, altered for use in field sensitive or field independent teaching. Observation check lists for both types of strategies are appended. A manual of self-assessment units accompanies this series. (Author/AM)

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NEW APPROACHES TO BILINGUAL, BICULTURAL EDUCATION

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Field Sensitive and Field Independent Teaching Strategies

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DEDICATION

This series of teacher-training materials is dedicated to Dr. George I. Sánchez, pioneer in bilingual, bicultural education.

Field Sensitive and Field Independent Teaching Strategies

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FOREWORD

New Approaches to Bilingual, Bicultural Education is a series of teacher-training materials developed under an E.S.E.A. Title VII grant for the use of bilingual, bicultural projects. The materials propose a new philosophy of education called "cultural democracy" which recognizes the individuality of both teachers and students. By using the documents and videotapes, teachers and teacher associates can carefully study their own classroom techniques and the learning styles of their students. They then can use their new knowledge in ways which will best serve the needs of individual children.

The manuals in this series were edited by Pam Harper, staff editor, DCBBE. Covers and title pages were designed by Sarah Frey, assistant editor, DCBBE. Requests for information concerning the documents in this series should be addressed to the Dissemination Center for Bilingual Bicultural Education, 6504 Tracor Lane, Austin, Texas 78721. Accompanying videotapes are available from Videodetics, 2121 S. Manchester, Anaheim, California 92802.

Juan D. Solís, Director
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PREFACE

This "teaching manual" is the fifth in a series of seven commissioned by the U.S. Office of Education in connection with the Bilingual Education Act (E.S.E.A., Title VII).* The manuals, with accompanying videotapes and self-assessment units, are intended for use in bilingual, bicultural programs. It is envisioned that the materials will provide useful information about the education of culturally diverse children.

The manuals cover a wide range of topics, including educational philosophy, cultural values, learning styles, teaching styles, and curriculum. The three videotapes supplementing each manual review and illustrate subjects presented in the manual. Three self-assessment instruments of a "programmed" nature may be used to conclude the study of each manual. These evaluation instruments are designed both as a review and as a means of emphasizing important concepts.

The manuals, videotapes, and self-assessment units comprise a carefully designed course of study for persons engaged in bilingual, bicultural education. It is our sincere hope that the course of study will prove useful to such persons as they participate in this exciting and promising frontier of education.

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COMPONENTS OF THE SERIES

NEW APPROACHES TO BILINGUAL, BICULTURAL EDUCATION

Teacher-Training Manuals — seven individual documents

1. A New Philosophy of Education
2. Mexican American Values and Culturally Democratic Educational Environments
3. Introduction to Cognitive Styles
4. Field Sensitivity and Field Independence in Children
5. Field Sensitive and Field Independent Teaching Strategies
6. Developing Cognitive Flexibility
7. Concepts and Strategies for Teaching the Mexican American Experience

Self-Assessment Units — one document

Includes three self-administered evaluation instruments for each of the seven manuals described above.

Videotapes

Three videotapes are available for each of the seven manuals described above. Each tape corresponds with a self-assessment unit. Further information regarding videotapes is available from the distributor, Videodetics, 2121 S. Manchester, Anaheim, California 92802.

NOTE

The components of this series may be used either individually or together. Every effort has been made to develop a flexible set of materials so that projects can choose which components are most helpful to them.

FIELD SENSITIVE AND FIELD INDEPENDENT TEACHING STRATEGIES

Introduction

The purpose of this manual is to acquaint teachers with both the field sensitive and the field independent teaching strategies. The manual is further intended to help teachers adjust their teaching styles to the learning styles of their students. This objective is of vital importance in creating culturally democratic educational environments. The manual begins with a number of exercises which indicate how easily the two teaching strategies can be mastered. Instructions for using field sensitive and field independent teaching strategies are carefully explained. A rating form to use in determining success in using either of the two strategies is also included. Finally, a discussion of curriculum indicates how the "style" of instructional materials can be identified and, when necessary, altered for use in field sensitive or field independent teaching.

Teachers' Cognitive Styles, Teaching Styles, and Learning Styles

While it may seem strange to think of a **teacher** as having a preferred learning style, all of us take the role of learner at many times throughout our lives. We suggested in Manual No. 4 that preferred learning styles are part of cognitive styles. Field sensitive teachers, for example, probably share with field sensitive children a preference for warm, supportive teachers who use humanized materials. Does that mean that these same teachers actually teach in a field sensitive way? Not necessarily. The authors have found that many teachers who are themselves field sensitive rely almost exclusively on field independent teaching behaviors. (We attribute this to the nature of professional training programs and the field independent orientation of most schools.) It is apparent, then, that teachers' cognitive styles and teaching styles may not be the same. A person's cognitive style may, or may **not**, be a valid indicator of the style of that person's teaching.

These three subjects, cognitive style, teaching style, and learning style, are important aspects of culturally democratic educational environments. A key ingredient of culturally democratic educational environments is appropriateness of teaching and curriculum to the learner's cognitive style. This would be an easy task if all students shared the same cognitive style. However, this is not the case. Many combinations of field sensitivity and field independence are present in every classroom. To make teaching appropriate to the cognitive styles of all the children in a classroom, then, the teacher faces the task of having to master **both** the field sensitive and field independent teaching strategies (and combinations of the two).

How do you, the teacher or teacher associate, set out to meet this objective? One of the first steps is to determine which strategy is going to require most attention on your part. It is almost certain that you will be more familiar with one teaching strategy than the other. One of the strategies will require little effort to use effectively. At the same time, you will probably have to practice or rehearse the other teaching strategy carefully.

There are three things that you can do right now that will help you learn about the ease or difficulty you will have in using the field sensitive and field independent teaching strategies.

1. Determine whether you are primarily field sensitive or field independent (or "bicognitive"—meaning that you use both styles equally well, depending on the

situation).

2. Determine whether, in the role of learner, you usually prefer field sensitive or field independent teaching.
3. Determine whether you generally teach in a field sensitive or field independent way.

Measuring Cognitive Style in Adults

Two instruments for measuring cognitive style were discussed in Manual No. 4. The first was the Portable Rod and Frame Test and the second was the Embedded Figures Test. The Portable Rod and Frame Test is used with both children and adults. The Embedded Figures Test is available in separate forms for children and adults. These instruments often provide useful information concerning an adult's cognitive style. It is unlikely, however, that either of these two tests is readily available to most readers. Nonetheless, the reader probably has formed an impression of his or her cognitive style from reading Manuals 3 and 4. The descriptions of field sensitive and field independent persons may have evoked responses such as "That's me!" or "I don't have much in common with people like that."

Learning to identify oneself as field sensitive or field independent can be useful. This information can serve partly as the basis for matching teachers and teacher associates with children who have a similar cognitive style. For example, a field sensitive teacher or teacher associate might be placed in charge of a small group of field sensitive children. The teacher can decide to adopt curriculum and learning situations that are most appropriate for the teacher and students alike.

We have found matching students and teachers in this way to be very effective. One of the most obvious benefits is the teacher's familiarity with the students' entire approach to learning. This kind of situation is easier to create when teachers have an understanding of their own preferred learning styles.

Determining One's Preferred Learning Style

Perhaps the easiest way for the reader to approach the subject of preferred learning styles is to examine both Child Rating Forms in the previous manual. After examining these forms carefully, the reader should ask, "Which of these behaviors describes me as I was in grade school?" The period of time in your life is actually less important than what you, the reader, know about what kind of teaching is generally best for you. You might want to think about learning in school or in more informal circumstances, such as learning how to cook, sew, fish, play baseball, etc. It would be helpful if you can try to remember a situation in which you seemed to learn easily. At the same time, try to recall a situation in which the style or instruction was **not** effective for you.

To make this exercise valuable, we suggest that you take a few minutes to think about this issue seriously and then list the kinds of teaching that were both effective and ineffective in your own case.

Teaching Strategies Which Were Effective with Me	Teaching Strategies Which Were Not Effective with Me

This exercise has probably provided you with some useful ways of thinking about favorite teachers. What was it that made these persons "favorite teachers"? What were they able to do in your particular case that made the learning environment effective and comfortable? How does that contrast with teachers who may have been capable in other respects, but who taught you in ways other than what you now understand to be your preferred learning style?

It may seem that we are now ready to answer the question "Which teaching strategy will come naturally to me, and which will I need to learn and practice?" The answer would seem to be "I will 'fall into' teaching with the strategy that I, myself, would most enjoy as a learner." This answer may be true in the case of some readers, but for others the issue is unfortunately not so simple.

Preferred Learning Styles and Actual Teaching Styles

In spite of the answers teachers give to questions concerning their own favorite teachers, their ways of teaching sometimes are unrelated to their preferred learning styles. Some teachers, in other words, teach in ways that they, themselves, would find uncomfortable for learning. Why does this discrepancy occur? The answer seems to be that teachers experience pressures to teach in only certain ways.

Consider the example of a teacher or teaching associate who now prefers (or did at one time) the field sensitive learning style. This teacher shares with field sensitive children (discussed in the last manual) a preference for a close, openly affectionate relationship with an adult who uses a humanized and personalized curriculum. Yet this same teacher might conduct a classroom characterized by individual effort, competition, formality, and an abstract curriculum.

There are many possible reasons for the discrepancy between teaching style and preferred learning style. The teacher's own experience in public schools (and professional training) may have emphasized the conservative-essentialist philosophy of education discussed in Manual No. 1. This philosophy emphasizes a maximum of "efficiency" and a minimum of personalized instruction. Having been exposed only to this philosophy, the teacher we're considering probably equates doing a good job with a businesslike approach to teaching. The teacher's coworkers and school officials may reinforce a similar view. The school district may be pressing teachers to raise children's scores on achievement tests, creating a climate in which only the "traditional" approaches to teaching are rewarded. With continual exposure to these

pressures, the teacher eventually comes to think of traditional teaching as better in not only his or her own situation, but probably as the best approach for **most** educational settings.

There is a way to avoid value judgments of this kind. **The whole question of "better" teaching is changed when attention is shifted to children's preferred learning styles.** Educational environments based on learning styles children have developed through experiences in a particular social and cultural setting are culturally democratic. Educational environments which ignore or exclude these learning styles are culturally undemocratic. The "best" teaching then, is that which each child prefers **at a particular time**. (We will see in the following manual that teachers can introduce children to unfamiliar cognitive styles; when and how this is done is the subject of Manual No. 6.) Our purpose in this manual is to provide readers with insights into their own teaching and acquaint them with ways of developing sufficient flexibility to teach both field sensitive and field independent children effectively.

Identifying the Preferred Teaching Style

Our readers can learn much about their own teaching through careful observation of one of their "typical" lessons. We urge our teacher and teacher associate readers to use the following procedures for identifying their preferred teaching style.

1. Select a teaching objective and necessary materials.
2. Arrange the classroom (desks, chairs, tables) and materials in a way that seems comfortable or natural.
3. Arrange for an observer (fellow teacher or teacher associate) to fill out **both** forms in the appendix of this manual while viewing the lesson. If at all possible, arrange to videotape the lesson. The tape can be viewed later to compare impressions and discuss differing interpretations.
4. With the help of the observer, determine from the rating forms which teaching strategy, field sensitive or field independent, is used more often (or exclusively).

Further Insights

Readers can gain additional insights into their **dominant** teaching styles by carefully examining each category of the field sensitive and field independent teaching strategies and asking, "How often do I do this? How difficult would it be for me to begin using this instructional or curriculum-related behavior effectively and comfortably?" This information, along with an understanding of the reader's preferred or "most typical" teaching style, is very useful for identifying the particular techniques that are going to require most attention to master.

Comparing Field Sensitive and Field Independent Teaching Strategies

1. **Personal Behaviors** The overall relationship between teachers and students is quite different in the case of field sensitive and field independent teaching. The most visible feature of field sensitive teaching is an openly warm and expressive teacher. The field sensitive teacher is very responsive to students' feelings, even when the students don't openly say what they are feeling. The field independent teaching strategy, on the other hand, minimizes the importance of close, personal interactions between students and teachers. Perhaps the best word to use in describing the atmosphere of field independent teaching is **formal** (as demonstrated in Part 3 of Program 5 of the videotape series). Another term might be

impersonal (without implying aloofness or coldness). The teacher using the field independent strategy rarely allows attention to be shifted from instructional materials. The explanation for these different emphases is to be found in the preferred learning styles of field sensitive and field independent children. While field sensitive children actively seek approval and acceptance, field independent children are distracted and even irritated by an overly attentive adult. The field independent learner prefers a teacher who emphasizes individual effort and self-guidance.

2. **Instructional Behaviors** The personal behaviors we have described form the basis of teaching (instructional behaviors). The field sensitive teacher is always concerned with creating a warm and secure environment. With field sensitive learners, then, the teacher begins a lesson by first expressing confidence in the children's ability to succeed. The teacher also considers the interest field sensitive children often have in the purpose of a lesson and its personal relevance. For this reason, the teacher will indicate the usefulness of the concept to be taught. For example, we have observed teachers saying, "When you can do this, you will be able to help your mother when she goes shopping at Center Market," or "When you know how to read the clock, you can help me by telling me when we should start getting ready to go to the cafeteria."

In addition to indicating the usefulness of a lesson, a teacher using the field sensitive teaching strategy should make main principles obvious at the beginning of a lesson. The teacher might say, for example, "Today we are going to learn how to use the clock. As we do this together, you will find out how to look at the lines and numbers and know what time it is. I want you to remember always to look at the hand and the number it is pointing to. Let me show you how I can do this with my clock. Watch carefully, because when I'm through, I want you to put the hand on your clock so that it looks just like mine."

This example also illustrates how a teacher can **model** desired behaviors. Modeling is particularly appropriate for field sensitive learners, whose parents commonly provide careful examples of how things are to be done at home.

Another important feature of field sensitive teaching is **cooperative achievement**. Rather than recognizing only the child who finishes first, the field sensitive teacher would use rewards in ways that strengthen a sense of group feeling. "There! I knew that we could do it. All of our clocks have the little hand pointing straight up—they all say that it is 12 o'clock. Now let's do another one together."

The social atmosphere suggested in this example is much easier to achieve when the teacher and students are positioned around a small table. This arrangement also makes it possible for the teacher to conduct informal discussions and to interact closely with students. Being physically close to students makes it easier for the teacher to recognize a student who is confused or in any way distressed. Any expression of feelings on the part of the students is carefully attended to by the field sensitive teacher, who will even interrupt a lesson to respond to students' emotions (spoken and unspoken).

These aspects of field sensitive teaching are illustrated with actual classroom scenes in the videotape ("Field Sensitive and Field Independent Teaching Strategies") corresponding to this manual. One point that bears repeating is the importance of a close "give and take" atmosphere in field sensitive teaching. In the videotape we describe a teacher who created an

atmosphere of this nature partly through careful selection of instructional materials and classroom arrangement. The children, seated around a small, kidney-shaped table, worked in pairs. They had been instructed to help each other measure the area of brown or green sheets of construction paper. As the children worked, the teacher asked them to think of the sheets as a backyard or frontyard. The teacher followed this attempt to personalize the lesson by having the children fill in the imaginary yards. As the children cut out objects and figures to place in the yard, the teacher directed an informal discussion about the different yards.

The instructional behaviors in field independent teaching differ considerably from those of the field sensitive teaching strategy. One of the most obvious differences is the way in which the lesson or activity is introduced. The field sensitive teacher, for example, often models the behaviors that children are expected to use in a lesson or activity. Both the field sensitive and the field independent teacher would specify rules or other requirements for the lesson. Only the field independent teacher, however, would hint that other approaches might be discovered by the students. The teacher might even prompt the students to struggle with finding a new procedure: "See if you can find out how . . ." Many field independent learners are disappointed if they are **not** urged to discover things on their own, and modeling for these children is inappropriate. They generally prefer individual achievement and often enjoy vigorous competition.

For these reasons, the conventional classroom arrangement is often well suited to the field independent teaching strategy. Competition often seems more genuine and exciting if, as in a conventional classroom, the students are separated from one another. This arrangement also has the advantage of encouraging the child to work alone on work sheets and other individual assignments. In addition, the teacher can assume a position behind a desk at a strategic point in the classroom and in this way be available as a resource convener or "consultant."

Both the small group or the more formal, conventional classroom permit the field independent teacher to concentrate on imparting factual information. The role of information dispenser and consultant can take place during the period of one lesson. The teacher might give a short lecture or demonstration at the front of the room, pass out individual assignments, and then announce,"I want you to try very hard to do it by yourselves. If you can't do it one way, see if you can find another way. If you really need me, I'll be at my desk."

As the above example suggests, the field independent teacher is not continually available as a source of approval. Approval is usually granted for individual effort. The teacher might, for example, go about the room looking for an instance of a worksheet or project that meets certain standards. The recognition given by the teacher would emphasize the student's having excelled at the task (rather than pleasing the teacher). Rewards, then, tend to be nonsocial (awarding grades or stars, posting the student's work on a bulletin board, or granting the student a special privilege). Rewards given in the course of field sensitive teaching tend, by comparison, to be social in nature (smiles, hugs), involve an expression of feelings on the teacher's part ("It makes me very happy to see how nicely you and Maria can do that."), and frequently involve more than one student. These rewards are, moreover, an ongoing part of the teacher's interactions with students rather than occasional events.

3. **Curriculum-Related Behaviors** There is probably nothing more essential to using either the field sensitive or field independent teaching strategies successfully than starting a lesson

with the appropriate emphasis. Lessons "pull" teachers toward teaching in a certain way. Part of a lesson plan, then, is what the lesson "plans" for the teacher. To give but one example, a teacher will be hard pressed to use the personal and instructional behaviors of the field sensitive teaching strategy when the lesson materials contain only graphs, charts, and formulas. Similarly, field independent students are likely to lose interest if a teacher starts a lesson with materials which mention how numbers feel about themselves and the things that happen to them. These problems can be avoided by asking, **before** a lesson begins, "Do these materials attract students' attention to humor, fantasy, and human features, **or** do they attract attention to factual detail and analytical reasoning?"

After choosing materials for a lesson or activity, the teacher faces the task of getting the students ready to learn. We suggested earlier that different approaches should be used in introducing a lesson to field sensitive and field independent children. Field sensitive children generally prefer to know from the start exactly what they will be doing. Performance objectives and main points are specified in advance, along with indications of the lesson's usefulness or personal relevance. Consider the following example:

> Today we're going to learn how to measure the length of the paper houses we made yesterday. We will be using these rulers, which I want you to use in a special way. I'll show you how. When we get through, you will be able to tell me how many inches long your own paper house is. There are a lot of different things here at school and at home you can measure. You can help your mother measure cloth when making clothes. You **also** could help your father measure what he is making with wood or metal. You can also help **me** measure things. I have some pretty things in this bag that I need to have measured. After you know how, I'd like you to help me measure them.

The lesson or activity takes on a **global** meaning. The child is not left wondering how small details and specific things he will learn fit into a larger picture. The opposite tends to be true with field independent learners. For one thing, they usually prefer to break a problem into parts and deal with problems largely at that level. In addition, field independent learners are often excited by **well-managed** uncertainty ("These are the materials we'll be using—rulers and squares. Who can guess what I want you to learn today? Look at these things carefully and, if you think you know what you're going to learn how to do, show me.")

This example also suggests that the **discovery approach** works well in field independent teaching. This **curriculum-related** behavior is illustrated in a classroom scene shown in Part 3 of the videotape corresponding to this manual. Instead of stating a principle or rule at the outset of the lesson, the teacher identifies procedures in a way that encourages the children to **discover** the principle. The children then attempt to color **one-half** of the geometric shapes the teacher has given them. Expressions of uncertainty prompt the teacher to renew her emphasis on discovery and individual effort: "Do it any way you want" and "Do what you think you need to do." Later in this series we see the teacher ask the children if the colored objects have two parts and, in addition, if the parts are equal in size. Although the children easily recognize that each object has two colored parts, they are less sure that the two parts are equal in area. The children often appear convinced that the parts **are** equal, but the teacher teases them with a possible discovery by saying, "We don't know yet." **Eventually the teacher asks,**

"What's an easy way to check to see if they're equal?" An observant girl answers, "Fold it before you color it." The teacher's reply is very much in keeping with the kinds of rewards used in field independent teaching: "O.K., I was going to say that, too, Yolanda. She folded hers before she colored it. That's the **easiest** way to do it right now because we don't have any rulers."

By choosing appropriate instructional materials (and deliberately withholding the rulers), the teacher has successfully involved her students in **inductive learning**. At the same time she has brought to the students' attention the discovery of a novel and **timesaving** solution.

The field sensitive teaching strategy does not emphasize the discovery approach or moving from particulars to generalizations. Because field sensitive children have been familiarized at home with a teaching style which utilizes modeling (see Manual No. 3), requiring these children to work with inductive learning materials is not usually appropriate. These children prefer instead to apply a rule or procedure once it has been clearly presented.

An example of this approach is provided in Part 2 of Program 5 in the videotape series accompanying these manuals. The teacher tells the children at the outset of the lesson that they will be working with **intersections**. To prevent the children's misgivings, she expresses confidence in their ability to learn the concepts. She also suggests that the way in which they will use intersections is not as difficult as the sound of the word suggests. As the lesson continues, the teacher moves carefully from general rules to particulars. At one point, for example, she expresses a desire to have the family of one of the students come to her house for dinner. As a means of assuring that the dinner will appeal to the tastes of both families, she suggests that the class help her list the foods that each family likes. The goal, which she attempts to make obvious, is to make a list (set) of those things common to both families' food preferences (intersection). The meaning of intersection, and examples which define it, are repeated often enough to help the children recognize an intersection when they see one.

Summary of the Two Teaching Strategies

The following chart is intended to provide the reader with a brief summary comparison of the field sensitive and field independent teaching strategies. More detailed charts are located at the end of this manual. We suggest that the reader examine the following chart as a review of the preceding pages and use the charts at the conclusion of the manual when actually planning a lesson.

Field Sensitive Teaching	Field Independent Teaching
1. openly warm and affectionate	1. formal and serious
2. social rewards used to strengthen personal ties and group spirit	2. nonsocial rewards given in recognition of individual achievement
3. lessons prefaced with supportive assurances from teacher and detailed overview of objectives	3. lessons prefaced with factual information and reminders of individual effort
4. problem-solving strategies modeled by teacher who then stresses application of general rules to particular problems	4. solutions to problems often left to imagination of students who use teacher more as a resource person than model

Field Sensitive Teaching	Field Independent Teaching
5. students' attention drawn to generalization and global characteristics ("the big picture")	5. students' attention directed to individual elements and ways of combining these to reach conclusions and generalizations
6. curriculum is humanized and adapted to students' personal experiences	6. curriculum focuses on factual details, often making reference to formulas, graphs, and tables

Characteristics of Curriculum

The examples given in the last section (along with other examples in the videotape, Program 5) alert us to the kinds of teaching materials that are appropriate for the field sensitive and field independent teaching strategies. Materials which have intentionally been colored with elements of fantasy, humor, and human interest are especially appropriate for field sensitive students. In our example of the teacher's food preferences, the elements used to teach the concept were related to the personal experiences of both the teacher and the students. Some commercial curriculum materials share these characteristics; many do not. As our example of teaching **intersection** illustrates, the teacher can quite easily convert abstract materials into something of much greater appeal to field sensitive children. The main thing to remember in converting materials for this purpose is to incorporate human interest and add elements which have immediate relevance to the students' lives and interests. For example, using inexpensive photographs of students' homes and communities will often help make a new concept more attractive. The Van Allen approach to reading similarly starts with a child's personal interests by encouraging him to draw a picture of his choosing and then narrate a story to accompany the picture.

Field independent learners, on the other hand, find such alterations of learning materials distracting. They would rather focus on only the most essential features of a concept or activity. For them, the materials we described in connection with the field independent math lesson (halves and equal parts) are appropriate. A triangle is a triangle, with little importance or concern attached to its usefulness as a Christmas tree. Field independent children therefore tend to perform well in lessons which center attention on graphs, charts, and formulas. This tends to be true in social studies as well as in math lessons.

Materials for field sensitive children should be of a kind that evokes expressions of feelings on the part of both students and teachers. A puppet, for example, tends to invite questions (and answers) about the puppet's personal experiences. The puppet can turn the game around and ask the children questions about **their** lives ("Where do you live? What is your favorite food? How do you feel when your teacher smiles at you?"). One teacher known to the authors used a puppet both to teach concepts and to encourage children to talk about their feelings. The puppet first showed the children how to count by twos. (The teacher capitalized on this opportunity for **modeling** by having the puppet encourage the students to use their own number lines just the way he used his.) The lesson ended with the teacher's introducing a language experience activity. To do so, the teacher explained that the puppet was so good at counting that he entered a contest and had to count by twos at the front of the classroom. Since the students knew a great deal about this puppet from previous stories, the teacher asked, "How do you think he felt when he stood in front of the classroom?" The students

gave an elaborate account of how it feels to be afraid. With this opening, the teacher asked the children to relate personal experiences in which, they, themselves, had been afraid. Whenever it was appropriate, the teacher helped the children clarify their feelings: "It sounds like you were really afraid the first time, but after that you were just a little nervous."

Puppets are also useful in encouraging children to work cooperatively with one another. Children almost always like puppets and can be counted on to help them. Knowing this, a teacher can present a half-completed math problem and say:"Pablo needs us to help him finish this problem; he doesn't know how to finish it. Let's see if we can all work together to help him get the right answer."

Another point to consider in choosing curricular materials is the message the materials convey to students. Simply handing students their own worksheets and crayons is a reminder that individual effort is expected. Asking a group of children to help a puppet solve a problem suggests that a cooperative effort is needed. Giving students projects or materials which necessitate comparing answers similarly permits the teacher to help children work cooperatively and productively with one another.

A final consideration is the degree to which materials have been structured or organized **before** a lesson. For field sensitive lessons, teachers will probably want to choose materials which make general principles obvious to the students. The materials or worksheets given to the students should call for **application** of the principles (in other words, the deductive approach). The materials would be **less structured** for field independent students, who generally prefer an inductive approach to learning. Field independent students should be urged to search for generalizations and novel solutions which are not self-evident in the materials themselves.

The following chart summarizes important differences between field sensitive and field independent curriculum.

FIELD SENSITIVE	FIELD INDEPENDENT
1. Materials readily lend themselves to fantasy, humor, and humanization	1. Materials (such as graphs and charts) draw attention almost exclusively to factual details
2. Relevant--teacher and students can easily relate personal experiences to curriculum	2. Materials have high intrinsic appeal; although irrelevant to personal experience, concepts are sufficiently interesting in and of themselves to sustain student interest
3. Materials "invite" expressions of feelings from both teacher and students	3. Materials require a high degree of concentration and methodical attention to subtle details
4. Design or format of materials is suitable for cooperative efforts and group projects	4. Materials are more suitable for individual effort and competition than for cooperative group work
5. Main principles and solutions are easy for teacher to demonstrate and model; materials given to students call for application of principles	5. Materials stimulate students to search on their own for generalizations and unique solutions

FIELD SENSITIVE	FIELD INDEPENDENT
Examples: Sesame Street or Electric Company (television programs on the Public Broadcasting System network)	Examples: **Modern School Math: Structure and Use** (Houghton Mitflin) **Elementary Science Study** (McGraw Hill, Webster Division) **Xerox Education Sciences** (SAPA; Basic K - 6)

Arranging the Classroom

We suggested earlier in this manual that the traditional or conventional classroom arrangement is probably better suited to field independent teaching than to field sensitive teaching. The familiar pattern of desks lined up in rows with the teacher's desk centrally located encourages individual effort (and often competition). This arrangement is, however, counterproductive to field sensitive teaching. Small tables positioned in a corner of the classroom are far more conducive to the kinds of close, personal interactions required for field sensitive teaching.

A compromise seems to be readily available in the form of a classroom built around interest centers or activity areas. Most classrooms can be rearranged to accomodate three or four semi-partitioned areas. This arrangement affords many opportunities for diversifying both teaching and curriculum. The teacher can engage a group of field sensitive children in a cooperative task or activity in one of the centers and, in an adjacent center, work directly with another group while monitoring the first group. A group of field independent learners can be allowed to work individually, seeking guidance as needed. This should not be confused with the type of classroom in which children do whatever they desire. It has been our experience that field independent children enjoy working toward specific goals and knowing that their time is to be used productively. Before leaving these students, then, the teacher can emphasize what they are expected to accomplish and the length of time set aside for meeting particular objectives. At another point, the teacher may want to convene a group of field independent learners in an activity center in order to present a lesson designed particularly for them.

A classroom designed along lines of activity centers presents teachers with many opportunities to practice unfamiliar teaching strategies. In addition, this arrangement permits the teacher to group children for particular lessons (and to reorganize the groups as the school year progresses). An arrangement which fosters flexibility in teaching and makes provisions for children's preferred learning styles has met some of the basic requirements of culturally democratic learning environments.

Rating Field Sensitive and Field Independent Teaching

The rating forms in the appendix of this manual are intended for use in evaluating teachers' use of the field sensitive and field independent teaching strategies. The rating forms themselves require minimal practice to use correctly. The observer or rater must first, of course, be thoroughly familiar with the meaning of each behavioral category. The categories should be easily understood following careful reading of this manual and the appendix. In addition, persons using the forms must agree on the meaning of "not true," "seldom true,"

"sometimes true," "often true," and "usually true." Reaching such an agreement in advance greatly increases the value of a completed rating form to the teacher who has been observed.

For this reason, it is very worthwhile for persons preparing to rate each other's teaching to rate several lessons conducted by other teachers. (Both the field sensitive form **and** the field independent form should be used in this exercise.) The ratings can be done either "live" or by viewing videotaped lessons. It is important that the two raters do not converse with one another or compare notes while viewing the lesson. **After** viewing the lesson, the two raters should carefully compare forms and attempt to clarify the reasons for dissimilar ratings. With a better understanding of each other's interpretations, the two raters should view another lesson. Again, there should be no comparisons or communications while completing the rating forms.

After several sessions of viewing lessons and rating them independently, the two persons will have arrived at a common meaning for the categories ("teaching behaviors") and the "frequency" columns. At this point the two persons can make plans to rate each other's teaching **with one of the two forms**. In the critique or review sessions that follow, each person is assured of knowing that there are no important disagreements as to the meaning of the rating form.

The final precaution concerns the rater's understanding of the teacher's objectives. The "field sensitive" form should be used when the teacher intends to use this strategy; and, conversely, the "field independent" form should be used for a lesson based on that strategy. The two forms should **not** be used simultaneously (except when observing teachers who are not deliberately trying to use only one of the two strategies described in this manual). On occasion, the rater may want to record frequently occurring behaviors from the unintended teaching strategy. This information is valuable for the teacher in learning which teaching behaviors tend to "creep in" regardless of intentions to minimize their occurrence.

At the conclusion of a lesson, the teacher and rater should systematically review the completed form and compare impressions. These review sessions are even more helpful if the two persons can view a videotape of the lesson, returning the tape to places considered to be of special significance. The interchange of information and impressions should prove very helpful to the teacher in planning to use the teaching strategy in question more effectively in a later lesson.

Mastering the field sensitive and field independent teaching strategies enables teachers to create culturally democratic educational environments. In the following manual we will consider a final aspect of this objective—bicognitive development in children.

APPENDIX

CATEGORIES OF THE FIELD SENSITIVE TEACHING STYLE

Category: Personal Behaviors

1. Displays physical and verbal expressions of approval and warmth; e.g., embracing and sitting close to a child
2. Uses personalized rewards which strengthen the relationship with students

Category: Instructional Behaviors

1. Expresses confidence in child's ability to succeed; is sensitive to children who are having difficulty and need help
2. Gives guidance to students; makes purpose and main principles of lesson obvious; presentation of lesson is clear with steps toward "solution" clearly delineated
3. Encourages learning through modeling; asks children to imitate
4. Encourages cooperation and development of group feeling; encourages class to think and work as a unit
5. Holds informal class discussions; provides opportunities for students to see how concepts being learned are related to students' personal experiences

Category: Curriculum-Related Behaviors

1. Emphasizes global aspects of concepts; before beginning lesson ensures that students understand the performance objectives; identifies generalizations and helps children apply them to particular instances
2. Personalizes curriculum; teacher relates curriculum materials to own interests and personal life as well as to those of students
3. Humanizes curriculum; attributes human characteristics to concepts and principles
4. Uses teaching materials to elicit expression of feelings from students; helps students apply concepts for labeling their personal experiences

CATEGORIES OF THE FIELD INDEPENDENT TEACHING STYLE

Category: Personal Behaviors

1. Is formal in relationship with students; acts the part of an authority figure
2. Centers attention on instructional objectives; gives social atmosphere secondary importance

Category: Instructional Behaviors

1. Encourages independent student achievement; emphasizes the importance of individual effort
2. Encourages competition between students
3. Adopts a consultant role; teacher encourages students to seek help only when they experience difficulty
4. Encourages learning through trial and error
5. Encourages task orientation; focuses student attention on assigned tasks

Category: Curriculum-Related Behaviors

1. Focuses on details of curriculum materials
2. Focuses on facts and principles; teaches students how to solve problems using shortcuts and novel approaches
3. Emphasizes math and science abstractions; teacher tends to use graphs, charts, and formulas in teaching, even when presenting social studies curriculum
4. Emphasizes inductive learning and the discovery approach; starts with isolated parts and slowly puts them together to construct rules or generalizations

FIELD INDEPENDENT TEACHING STRATEGIES OBSERVATION INSTRUMENT

Indicate the frequency with which each teaching behavior occurs by placing a check in the appropriate column.

Teacher's Name _____ Grade _____ School _____ Date _____

Teaching Situation _____ Observer's Name _____

Teacher's intended teaching style (if applicable) _____

FIELD INDEPENDENT TEACHING BEHAVIORS	FREQUENCY				
	NOT TRUE	SELDOM TRUE	SOMETIMES TRUE	OFTEN TRUE	ALMOST ALWAYS TRUE
PERSONAL BEHAVIORS					
1. Maintains formal relationships with students					
2. Centers attention on instructional objectives; gives social atmosphere secondary importance					
INSTRUCTIONAL BEHAVIORS					
1. Encourages independent student achievement					
2. Encourages competition between students					
3. Adopts a consultant role					
4. Encourages trial and error learning					
5. Encourages task orientation					
CURRICULUM-RELATED BEHAVIORS					
1. Focuses on details of curriculum materials					
2. Focuses on facts and principles; encourages using novel approaches to problem solving					
3. Relies on graphs, charts, and formulas					
4. Emphasizes inductive learning and discovery approach					

FIELD SENSITIVE TEACHING STRATEGIES OBSERVATION INSTRUMENT

Indicate the frequency with which each teaching behavior occurs by placing a check in the appropriate column.

Teacher's Name _____ Grade _____ School _____ Date _____

Teaching Situation _____ Observer's Name _____

Teacher's intended teaching style (if applicable) _____

FIELD SENSITIVE TEACHING BEHAVIORS	FREQUENCY				
	NOT TRUE	SELDOM TRUE	SOMETIMES TRUE	OFTEN TRUE	ALMOST ALWAYS TRUE
PERSONAL BEHAVIORS					
1. Displays physical and verbal expressions of approval and warmth					
2. Uses personalized rewards which strengthen the relationship with students					
INSTRUCTIONAL BEHAVIORS					
1. Expresses confidence in child's ability to succeed					
2. Gives guidance to students; makes purpose and main principles of lesson obvious to students					
3. Encourages learning through modeling; asks children to imitate					
4. Encourages cooperation and development of group feeling					
5. Holds informal class discussions relating concepts to students' experiences					
CURRICULUM-RELATED BEHAVIORS					
1. Emphasizes global aspects of concepts; clearly explains performance objectives					
2. Personalizes curriculum					
3. Humanizes curriculum					
4. Uses teaching materials to elicit expression of feelings from students					

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